**Example:**



*There is a 68% chance that Lebron will score on any shot. If he takes 6 shots in the first quarter find:*

P(he makes exactly 4):

So N, number of attempts=6

R, number of made shots =4

N-R, number of misses = 2

p , prob he makes a shot, = .68

q, prob he misses a shot = (100-68) =.32

$$6C4\*.68^{4}.32^{2}$$

6C4 = A combination = $\frac{6\*5\*4\*3}{4\*3\*2\*1}=\frac{360}{24}=15$

There are 15 ways he could have made 4 out of 6 shots.

So the overall odds of making exactly 4 out of 6 shots is:

$$15\*.68^{4}.32^{2}=32.8\%$$

There is a Casino game (I just made up) called Roll7. It costs $3 to play. For each high number (5 or 6) you will get $1. Fill out the table.

|  |  |  |
| --- | --- | --- |
| # of high rolls | Theoretical (show work) | Experimental |
| 0 |  |  |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |
| 7 |  |  |